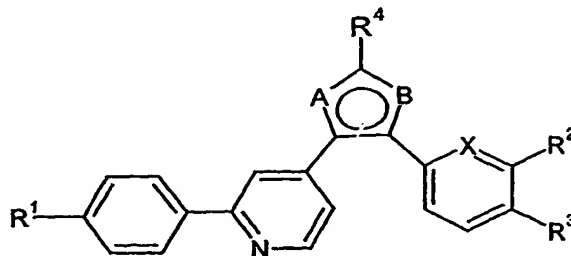


Claims

- 1 A compound of formula (I), a pharmaceutically acceptable salt, solvate or derivative thereof:



(I)

wherein

either A is S and B is N, or A is N and B is S;

X is N or CH;

R¹ is selected from hydrogen, C₁₋₆alkyl, C₁₋₆alkenyl, C₁₋₆alkoxy, halo, cyano, perfluoro C₁₋₆alkyl, perfluoroC₁₋₆alkoxy, -NR⁵R⁶, -(CH₂)_nNR⁵R⁶, -O(CH₂)_nOR⁷, -O(CH₂)_n-Het, -O(CH₂)_nNR⁵R⁶, -CONR⁵R⁶, -CO(CH₂)_nNR⁵R⁶, -SO₂R⁷, -SO₂NR⁵R⁶, -NR⁵SO₂R⁷, -NR⁵COR⁷ and -O(CH₂)_nCONR⁵R⁶;

R² is hydrogen, C₁₋₆alkyl, halo, cyano or perfluoroC₁₋₆alkyl;

R³ is hydrogen or halo;

R⁴ is -NH₂;

where

R⁵ and R⁶ are independently selected from hydrogen; Het; C₃₋₆cycloalkyl optionally substituted by C₁₋₆alkyl; or by C₁₋₆alkyl optionally substituted by Het, alkoxy, cyano or -NR^aR^b (where R^a and R^b which may be the same or different are hydrogen or C₁₋₆alkyl, or R^a and R^b together with the nitrogen atom to which they are attached may form a 4, 5 or 6-membered saturated ring); or R⁵ and R⁶ together with the nitrogen atom to which they are attached form a 3, 4, 5, 6 or 7-membered saturated or unsaturated ring which may contain one or more heteroatoms selected from N, S or O, and wherein the ring may be further substituted by one or more substituents selected from halo (such as fluoro, chloro, bromo), cyano, -CF₃, hydroxy, -OCF₃, C₁₋₆alkyl and C₁₋₆alkoxy;

R⁷ is hydrogen or C₁₋₆alkyl;

Het is a 5 or 6-membered C-linked heterocyclyl group which may be saturated, unsaturated or aromatic, which may contain one or more heteroatoms selected from N, S or O and which may be substituted by C₁₋₆alkyl; and

n is 1-4;

with the proviso that the compound of formula (I) is not:

5-[2-(4-chlorophenyl)pyridin-4-yl]-4-pyridin-2-yl-1,3-thiazol-2-amine;

5-[2-(4-methoxyphenyl)pyridin-4-yl]-4-pyridin-2-yl-1,3-thiazol-2-amine;

5-[2-(4-fluorophenyl)pyridin-4-yl]-4-pyridin-2-yl-1,3-thiazol-2-amine;

5-[2-(4-ethylphenyl)pyridin-4-yl]-4-pyridin-2-yl-1,3-thiazol-2-amine; or

5-[2-(4-ethoxyphenyl)pyridin-4-yl]-4-pyridin-2-yl-1,3-thiazol-2-amine.

- 2 A compound according to claim 1 with the proviso that when A is S; B is N; X is N; R¹ is hydrogen, C₁₋₆alkyl, C₁₋₆alkoxy, halo, cyano, perfluoroC₁₋₆alkyl or perfluoroC₁₋₆alkoxy; R² is hydrogen, C₁₋₆alkyl, halo, cyano or perfluoroC₁₋₆alkyl; and R³ is hydrogen or halo; then R⁴ is not NH₂.
- 3 A compound according to any preceding claim wherein X is N.
- 4 A compound according to any preceding claim wherein R¹ is -NR⁵R⁶, -(CH₂)_nNR⁵R⁶, -O(CH₂)_n-Het, -O(CH₂)_nNR⁵R⁶, -CONR⁵R⁶, -SO₂R⁷ or -O(CH₂)_nCONR⁵R⁶.
- 5 A compound according to any preceding claim wherein R⁵ and R⁶ are independently selected from hydrogen; Het; C₃₋₆cycloalkyl optionally substituted by C₁₋₆alkyl; or by C₁₋₆alkyl optionally substituted by Het, alkoxy, cyano or -NR^aR^b (where R^a and R^b which may be the same or different are hydrogen or C₁₋₆alkyl; or R^a and R^b together with the nitrogen atom to which they are attached may form a 4, 5 or 6-membered saturated ring); or R⁵ and R⁶ together with the atom to which they are attached form a morpholine, piperidine, pyrrolidine or piperazine ring, each of which may be substituted by halo (such as fluoro, chloro, bromo), cyano, -CF₃, hydroxy, -OCF₃, C₁₋₄alkyl or C₁₋₄alkoxy.
- 6 A compound according to any preceding claim wherein R¹ is morpholin-4-yl, methanesulfonyl, 4-ethylpiperazin-1-yl, (morpholin-4-yl)carbonyl, .

(tetrahydropyran-4-yl)-aminocarbonyl, (morpholin-4-yl)methyl, aminocarbonylmethoxy, 2-(pyrrolidin-1-yl)-ethoxy, (1-methyl-imidazol-4-yl)methoxy, ethanesulfonyl, 4-(1-ethyl-piperazin-4-yl)carbonyl, (morpholin-4-yl)carbonylmethoxy, (pyrrolidin-1-yl)methyl, (dimethylamino)methyl, isopropylaminomethyl, cyclobutylaminomethyl, (5-methyl-isoxazol-3-yl)methoxy, (3,5-dimethylisoxazol-4-yl)methoxy, N-methyl-N-(3-dimethylaminopropyl)aminocarbonyl, 4-(1-isopropyl-piperazin-4-yl)carbonyl, 2-(pyrrolidin-1-yl)ethylaminocarbonyl, 3-methoxypropylaminocarbonyl, 2-(diethylamino)ethylaminocarbonyl, (2-methoxy-1-methyl)ethylaminocarbonyl, (tetrahydrofuran-2-yl)methylaminocarbonyl, 2-methoxyethylaminocarbonyl, 2-cyanoethylaminocarbonyl, (N-methyl-N-cyclohexyl)aminocarbonyl or 4-methyl-piperidin-1-ylcarbonyl.

- 7 A compound according to claim 6 wherein R¹ is (tetrahydropyran-4-yl)-aminocarbonyl, (pyrrolidin-1-yl)methyl, (dimethylamino)methyl, (morpholin-4-yl)methyl, morpholin-4-yl, 4-ethylpiperazin-1-yl or aminocarbonylmethoxy.
- 8 A compound according to any preceding claim wherein R² is hydrogen, C₁₋₆alkyl, chloro or fluoro.
- 9 A compound according to any preceding claim wherein R³ is hydrogen or fluoro.
- 10 A compound according to any preceding claim wherein when X is N, R² is methyl.
- 11 A compound according to any preceding wherein when X is N and R² is methyl, R³ is hydrogen.
- 12 A compound according to claim 1 wherein
 either A is S and B is N, or A is N and B is S;
 X is N;
 R¹ is -NR⁵R⁶, -(CH₂)_nNR⁵R⁶, -O(CH₂)_n-Het, -O(CH₂)_nNR⁵R⁶, -CONR⁵R⁶, -SO₂R⁷ or -O(CH₂)_nCONR⁵R⁶;
 R² is hydrogen, methyl, chloro or fluoro;
 R³ is hydrogen or halo;

R⁴ is -NH₂;

where

R⁵ and R⁶ are independently selected from hydrogen; Het; C₃₋₆cycloalkyl optionally substituted by C₁₋₆alkyl; or by C₁₋₆alkyl optionally substituted by Het, alkoxy, cyano or -NR^aR^b (where R^a and R^b which may be the same or different are hydrogen or C₁₋₆alkyl, or R^a and R^b together with the nitrogen atom to which they are attached may form a 4, 5 or 6-membered saturated ring); or R⁵ and R⁶ together with the atom to which they are attached form a morpholine, piperidine, pyrrolidine or piperazine ring, each of which may be substituted by halo (such as fluoro, chloro, bromo), cyano, -CF₃, hydroxy, -OCF₃, C₁₋₄alkyl or C₁₋₄alkoxy;

R⁷ is hydrogen or C₁₋₆alkyl;

Het is a 5 or 6-membered C-linked heterocyclyl group which may be saturated, unsaturated or aromatic, which may contain one or more heteroatoms selected from N, S or O and which may be substituted by C₁₋₆alkyl; and

n is 1-4.

13 A compound according to claim 1 selected from the list:

5-{2-[4-(4-ethylpiperazin-1-yl)phenyl]pyridin-4-yl}-4-(6-methylpyridin-2-yl)-1,3-thiazol-2-amine (Example 3);

5-{2-[4-(morpholin-4-yl)phenyl]pyridin-4-yl}-4-(6-methylpyridin-2-yl)-1,3-thiazol-2-amine (Example 4);

5-{2-[4-(aminocarbonylmethoxy)-phenyl]pyridin-4-yl}-4-(6-methylpyridin-2-yl)-1,3-thiazol-2-amine (Example 10);

5-{2-[4-(2-(pyrrolidin-1-yl)-ethoxy)-phenyl]pyridin-4-yl}-4-(6-methylpyridin-2-yl)-1,3-thiazol-2-amine (Example 11);

4-[2-(4-((tetrahydropyran-4-yl)-aminocarbonyl)phenyl)pyridin-4-yl]-5-[6-methylpyridin-2-yl]-1,3-thiazol-2-amine (Example 16);

4-[2-(4-(morpholin-4-yl)phenyl)pyridin-4-yl]-5-[6-methylpyridin-2-yl]-1,3-thiazol-2-amine (Example 20);

4-[2-(4-(aminocarbonylmethoxy)phenyl)pyridin-4-yl]-5-[6-methylpyridin-2-yl]-1,3-thiazol-2-amine (Example 22);

4-[2-(4-((pyrrolidin-1-yl)methyl)phenyl)pyridin-4-yl]-5-[6-methylpyridin-2-yl]-1,3-thiazol-2-amine (Example 24);
4-[2-(4-((dimethylamino)methyl)phenyl)pyridin-4-yl]-5-[6-methylpyridin-2-yl]-1,3-thiazol-2-amine (Example 25); and
4-[2-(4-((tetrahydropyran-4-yl)aminocarbonyl)phenyl)pyridin-4-yl]-5-[pyridin-2-yl]-1,3-thiazol-2-amine (Example 26);
and pharmaceutically acceptable salts, solvates and derivatives thereof.

- 14 A pharmaceutical composition comprising a compound defined in any preceding claim and a pharmaceutically acceptable carrier or diluent.
- 15 The use of a compound defined in any one of claims 1 to 13 in the manufacture of a medicament for the treatment or prophylaxis of a disorder mediated by the ALK5 receptor in mammals.
- 16 The use according to claim 15 wherein the disorder is selected from chronic renal disease, acute renal disease, wound healing, arthritis, osteoporosis, kidney disease, congestive heart failure, ulcers, ocular disorders, corneal wounds, diabetic nephropathy, impaired neurological function, Alzheimer's disease, atherosclerosis, peritoneal and sub-dermal adhesion, any disease wherein fibrosis is a major component, including, but not limited to lung fibrosis, kidney fibrosis, liver fibrosis [for example, hepatitis B virus (HBV), hepatitis C virus (HCV)], alcohol induced hepatitis, retroperitoneal fibrosis, mesenteric fibrosis, haemochromatosis and primary biliary cirrhosis, endometriosis, keloids and restenosis.
- 17 The use according to claim 16 wherein the disorder is kidney fibrosis.
- 18 A compound defined in any one of claims 1 to 13 for use as a medicament.